

NO: **R065**

COUNCIL DATE: **April 20, 2020**

REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **April 15, 2020**

FROM: **General Manager, Engineering**

FILE: **6020-001**

SUBJECT: **Vision Zero Surrey 2019: A Year in Review**

RECOMMENDATION

The Engineering Department recommends that Council receive this report for information.

INTENT

The purpose of this report is to highlight the significant road safety achievements in 2019 by the Vision Zero Surrey Strategy in its first year, as summarized below, as well as to outline the plans for 2020.

BACKGROUND

On January 30, 2019, Council approved the Vision Zero Surrey Safe Mobility Plan 2019–2023 (the “Plan”), as described in Corporate Report No. R010; 2019 attached to this report as Appendix “I”.

The Plan outlines the overarching approach of the City to move towards the concept of zero people killed and seriously injured (“KSIs”) within the transportation network. The Plan sets out the vision, mission and identifies key focus areas to prioritize for action in order to move Surrey towards having the safest roads in British Columbia.

Our Vision

That Surrey has zero people killed and seriously injured on its roads, and that human life is valued above all else in Surrey’s transportation network.

Our Mission

Working in collaboration with the City’s partners, staff will take equitable, data-driven and evidence-based actions to ensure that City resources are spent where they will have the greatest impact on creating safer streets.

Key Focus Areas

Using a holistic, data-driven and evidence-led approach, informed by international best practice research, the City will:

- Target high risk intersections (Locations of Harm) where almost 80% of KSI collisions occur;
- Prioritize the City’s most vulnerable road users, including pedestrians, cyclists and motorcyclists (Victims of Harm), who account for 50% of Surrey’s KSI collisions, and

- Create a community mindset where ‘accidents’ no longer happen and high-risk driving behaviours (Perpetrators of Harm), which contribute to about 66% of Surrey’s KSI crashes, are no longer tolerated.

Our Target

The City’s goal is an achievable and measurable shorter-term target: to reverse the trend of rising injuries and deaths on Surrey’s roads and achieve a minimum 15% reduction in injury collisions over the next five years (2019-2023).

DISCUSSION

Year in Review – 2019 Major Accomplishments

City staff and partner organizations have all contributed significantly to the success of Vision Zero in Surrey in 2019. Together, staff and partners have taken a multi-sectoral, strategic approach to reducing death and serious injury, and have established Surrey as a Provincial and National leader in road safety.

Beyond the achievements noted below, staff have been working to enhance City processes, conduct data analysis and research, develop partnerships with organizations in diverse sectors, and create a detailed work plan for Vision Zero Surrey.

It is recognized that plans for 2020 will be adaptable due to COVID-19.

Award for Road Safety Project of the Year

In December 2019, the Plan was awarded the Greater Vancouver Institute of Transportation Engineers Mavis Johnson Award for Road Safety Project of the Year. The Mavis Johnson Award celebrates technical excellence in the field of road safety. The award highlights the high quality of work completed by the Vision Zero Surrey Action Team and showcases the important, life-changing efforts undertaken to ensure safe roads for everyone.

In the year since launching Vision Zero, Surrey has become a leader in the field of road safety at both a Provincial and National level, as demonstrated by their involvement in various committees and boards. These include:

- Chair of the Safe Roads and Communities Committee of the BC Road Safety Strategy;
- Member of the Transportation Association of Canada Road Safety Committee;
- Co-Chair of the Transportation Association of Canada Vision Zero and Safe Systems Committee; and
- Vice President of the Board of Directors for the Canadian Association of Road Safety Professionals.

Surrey’s involvement provides opportunities to shape policy, provide direction, and advocate for key strategic outcomes.

Hosted BC's First Vision Zero Summit

Vision Zero success in Surrey requires learning from leading Vision Zero jurisdictions and inspiring action by other road safety stakeholders. In February 2019, the City and the Provincial Health Services Authority partnered to deliver BC's First Vision Zero Summit. Recognizing that death and injury resulting from collisions is as much a public health emergency as it is an issue of public safety, BC's Provincial Health Officer, Dr. Bonnie Henry, opened the Summit proceedings with a keynote address. Over 150 attendees (civic leaders, transportation and health professionals) heard from international experts (San Francisco, Portland, Washington State) and champions active in implementing Vision Zero and the Safe Systems Approach. The Summit helped to build and sustain leadership, collaboration, and accountability for the elimination of serious injuries and fatalities on the road system and marked Surrey as a leader in road safety.

Data Driven Improvements

Vision Zero Surrey is committed to an evidence-led and data-driven approach. Research evidence and data informs the work that is done, the decisions that are made, and the policies that are implemented. Surrey has been recognized as a Provincial leader in crash data analysis. In 2019, staff continued to make improvements to the City's datasets and have been working closely with partners to improve the quality of the data and to help shape policy and practice with regards to crash data in BC.

Based on RCMP data, in 2019 there were 16 fatalities on streets in Surrey, which is a 23% decrease from 21 in 2018.

Established Vision Zero Action Team and Working Groups

The mandate for road safety does not rest solely on one level of government, nor with a single agency. Rather, it is a dispersed responsibility, and so collaboration is critical in order to successfully implement road safety programs and initiatives under Vision Zero Surrey. Following intense stakeholder engagement and development, a partnership was formed between key internal and external agencies/departments. The governance structure includes a City-led Vision Zero Action Team along with two supporting Working Groups: one focused on Education and Engagement, and the other on Research and Evaluation. This structure brings partner agencies together so challenges and opportunities can be determined, and progress measured to ensure staff are heading towards the goal of zero KSIs.

Enhanced Safety at Nine High Collision Intersections

Data shows that close to 80% of Surrey's KSI collisions occur at intersections. Analysis has identified the top 50 locations where serious collisions occur most frequently, and through 2019, safety upgrades have been completed at nine locations:

1. King George Boulevard and 128 Street;
2. 96 Avenue and 152 Street;
3. 88 Avenue and 152 Street;
4. 88 Avenue and 128 Street;
5. 80 Avenue and 120 Street;
6. 76 Avenue and King George Boulevard;
7. 64 Avenue and King George Boulevard;
8. 64 Avenue and Fraser Highway; and
9. 72 Avenue and 128 Street.

Common safety measures that are being installed at Surrey's high collision intersections include:

- Improved streetlighting: Wherever possible, streetlighting is upgraded to have a minimum of one streetlight illuminating each crosswalk, thus helping to improve the visibility of pedestrians.
- Fully protected left turns: Fully protected left turns are implemented at locations where the collision history shows a high frequency of collisions involving left-turning drivers. This signal operation provides a dedicated set of signal indications for left-turning vehicles which separates the movement of pedestrians and oncoming traffic from the movement of left-turning drivers.
- Removed or re-designed channelized right-turn lanes: Channelized right-turn lanes increase the speed of right-turning vehicles and the angle of entry can make it challenging for right-turning drivers to see vehicles on the road they are entering. The program is removing right-turn channels, or where this is not feasible, smart right-turn channels are being implemented, which improve the angle of entry and hence sight lines.

Leading Pedestrian Intervals

Pedestrians and vehicles normally enter the intersection at the same time. The light changes green for drivers and the "WALK" sign illuminates for pedestrians. This is when conflicts can occur. Leading Pedestrian Intervals ("LPIs") are traffic signal timing features that give pedestrians a head start into the crosswalk before the vehicle is given the green light. This allows pedestrians to move into the sight line of drivers and be seen more easily. LPIs have been shown to reduce pedestrian-vehicle crashes by up to 60%. At minimal cost and with the ease of application, these measures have been rapidly deployed at locations throughout Surrey. The City is currently leading the Province with over 70 LPIs in place.

Other Key Accomplishments

Other key accomplishments achieved through Vision Zero in 2019 include:

- Installed 33 speed humps;
- Installed 11 traffic signals;
- Installed 36 left-turn signals;
- Installed flashing lights at 13 crosswalks;
- Completed 450 traffic sign improvements;
- Investigated and responded to over 2,300 resident concerns;
- Distributed 6,100 Reflectors;
- RCMP and SCPS volunteers contributed over 3,400 hours to road safety initiatives; and
- Collected vehicle speed data at 335 sites.

The Year Ahead

The work plan for 2020 includes a continued focus on building infrastructure that is safe for all road users, undertaking collaborative multi-sectoral work to create safe speeds, and targeted, pro-active campaigns that help drive changes to road user behaviour. Specifically, the Vision Zero 2020 work plan includes:

- Infrastructure safety improvements at additional high collision locations;
- Reduced Residential Area Speed Limit Pilot Project Proposal;

- Conversion to fully protected left-turn signals at locations with high left-turn collision frequency;
- Work with University partners to conduct evaluation of the Vision Zero Team's work;
- Development of a Critical Collision Response Protocol to work collaboratively to address safety issues at high collision locations; and
- Monitoring of road safety issues during COVID-19 to assess impacts on Vision Zero goals and targets.

SUSTAINABILITY CONSIDERATIONS

The work of Vision Zero Surrey supports the objectives of the City's Sustainability Charter 2.0. In particular, this initiative supports the Sustainability Charter 2.0 themes of Public Safety, Infrastructure, Inclusion, Built Environment and Neighbourhoods, and Education and Culture. Specifically, the initiative supports the following Desired Outcomes ("DO") and Strategic Direction ("SD"):

- Age-Friendly Community DO15: Surrey's youngest and oldest residents are valued community members;
- Neighbourhoods and Urban Design DO8: The built environment enhances quality of life, happiness and well-being;
- Transportation Safety DO9: Transportation network supports and provides safe mobility for all ages and abilities;
- Transportation Safety DO10: Surrey is part of a coordinated effort to reduce the risk of harm for all road users, with attention to those who are most vulnerable, including pedestrians and cyclists;
- Economy SD4: Support low barrier, diverse, inclusive and informal learning opportunities across all communities; and
- Transportation DO11: An integrated and multi-modal transportation network offers affordable, convenient, accessible and safe transportation choices within the community and to regional destinations.

CONCLUSION

The Vision Zero Surrey 2019: A Year in Review document attached as Appendix "II" demonstrates that the City's commitment to realizing its Vision Zero goals. Staff have implemented some successful measure to address critical road safety issues. In addition to the initiatives outlined, Surrey has begun the journey to "Zero" by enhancing internal processes and using evidence-led decision making and RCMP data has identified a 23% reduction in fatalities on Surrey streets from 2018 to 2019.

Scott Neuman, P.Eng.
General Manager, Engineering

SSL/JB/SA/cc

Appendix "I" – Corporate Report No. R010; 2019
Appendix "II" - Vision Zero Surrey 2019: A Year in Review



CORPORATE REPORT

NO: **R010**

COUNCIL DATE: **January 30, 2019**

REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **January 25, 2019**

FROM: **General Manager, Engineering**

FILE: **8630-40 (Vision Zero)**

SUBJECT: **Vision Zero Surrey Safe Mobility Plan 2019-2023**

RECOMMENDATION

The Engineering Department recommends that Council:

1. Receive this report for information; and
2. Approve the Vision Zero Surrey Safe Mobility Plan 2019-2023, which is attached to this report as Appendix "I".

INTENT

The purpose of this report is to highlight the significant impact of serious collisions and seek Council approval of the Vision Zero Surrey Safe Mobility Plan 2019-2023 (the "Plan") to move Surrey towards zero deaths and serious injuries.

BACKGROUND

On December 17, 2018, Council approved the Vision Zero approach and continued development of the Vision Zero Surrey Safe Mobility Plan 2019-2023, as described in the Corporate Report No. R249; 2018 attached as Appendix "II".

Road safety is a shared responsibility and something that affects us all. The impacts of injuries and deaths are far reaching, and for every injury or death, dozens of others, whether family, friend or co-worker, are affected, and the impacts on individuals and their social networks can be life altering.

Injury collisions in Surrey have risen by 26% over the last 10 years. While this is due to numerous complex factors, such as population and traffic growth, and a rise in distracted driving, it is of considerable concern. Staff have reviewed best practices from around the world and have determined the Vision Zero principles would be the most suitable approach to reduce deaths and serious injuries on our roads.

Vision Zero is an international campaign that emphasizes that no loss of life in road transport is acceptable. This approach was first initiated in countries like Sweden, Norway and the United Kingdom, and has since gained momentum in many other countries. These countries have the lowest rates of motor vehicle crash fatalities in the world.

Vision Zero is now being embraced in the United States at a national level, in addition to New York City, Portland, San Francisco, Chicago, Los Angeles and Seattle. Canada has also adopted Vision Zero as a federal strategy. The Province of BC led the way in “Moving to Vision Zero: Road Safety Strategy Update and Showcase of Innovation in British Columbia” (Road Safety BC). Edmonton, Calgary, Toronto, Montreal and Vancouver are pursuing the goals of this mandate.

Vision Zero has been recognized by the World Health Organization as an effective road safety policy and is recognized for its ability to significantly reduce traffic fatalities and serious injuries. The City of Surrey is committed to Vision Zero and accepts its fundamental message: fatalities and serious injuries on the City’s roads are preventable and the City must strive to reduce traffic-related deaths and injuries to zero.

DISCUSSION

In 2017, 21 people were killed on Surrey’s roads. 14,500 were injured. The social costs and impacts of these losses are difficult to measure. Life-changing injuries create a burden on families, friends, communities, the health sector, insurers and social services.

In Surrey:

- Every hour, one person is injured;
- Every day, crashes cost over \$1 million;
- Every month, more than one person dies on our roads; and
- Every year, injury collisions are increasing by 3%.

Looking more closely at Surrey data, it is found that:

- 100% of pedestrians involved in a traffic collision are injured or killed;
- 88% of cyclists involved in a traffic collision are injured or killed;
- 73% of motorcyclists involved in a traffic collision are injured or killed; and
- 78% of all fatal and injury collisions in Surrey occur at intersections.

The scale of the personal loss is unacceptable, and the status-quo must be challenged through data-driven and evidence-led targeted actions. There is an economic and ethical imperative to address this unnecessary loss of life. This data shows that it is critical for Surrey to take a new approach to reducing serious collisions on our roads.

Vision Zero Surrey Safe Mobility Plan 2019-2023

The Vision Zero Surrey Safe Mobility Plan outlines the overarching approach of the City to move towards the concept of zero people killed and seriously injured (“KSIs”) within the transportation network. The Plan sets out the vision, mission and identifies key focus areas to prioritize for action in order to move Surrey towards having the safest roads in British Columbia.

Our Vision

That Surrey has zero people killed and seriously injured on its roads, and that human life is valued above all else in our transportation network.

Our Mission

Working in collaboration with our partners, we will take equitable, data-driven and evidence-based actions to ensure that City resources are spent where they will have the greatest impact on creating safer streets.

Zero is not a target to be achieved by a certain date; rather, it is an aspiration highlighting the need for the very best road safety outcomes and where no loss of life is considered acceptable. It has been called a Vision Zero Surrey Safe Mobility Plan because the freedom to move is fundamental to every aspect of life.

Through enhanced strategic partnerships and collaborations leveraging the broader road safety community, the City is embracing a Safe Systems Approach as a guiding principle to examine all factors contributing to safer roads. By adopting a holistic, evidence-led and data-driven approach to road safety, we will work towards the goal of zero serious injuries and fatalities on the City's roads. Safety will become integrated into the planning of the transportation system and the City as a whole.

The Plan expands on the principles identified in the 2008 Transportation Strategic Plan that recognized the importance of providing safer and healthier communities. It also supports the principles and policies of the City's Official Community Plan, Public Safety Strategy and Sustainability Charter. It recognizes that KSIs are both a public health issue and social issue which impact our families, our neighbourhoods and our community as a whole.

Road Safety Stakeholder Engagement

Staff reached out to partners and stakeholders in order to explore further issues and opportunities related specifically to road safety.

Four different groups were included in the process:

- Internal staff from across the City;
- Not-for-profit organizations, interest groups and community groups including Lookout Society, MADD, Options Community Services, HUB, Surrey Seniors Planning Table, Disability Alliance BC, BC Coalition of Motorcyclists, Surrey Board of Trade, DiverseCity, and Surrey Crime Prevention Society;
- Business Improvement Associations representing different neighbourhoods; and
- Organizational level stakeholders such as RCMP, ICBC, Surrey Schools, Coroners Service of BC, Road Safety BC, Fraser Health Authority, Provincial Health Services Authority and BC Injury Prevention.

Some key concerns emerged:

- Speeding (biggest concern);
- Distracted driving;
- The need for more enforcement, including automated;
- Vulnerable road users (pedestrians and cyclists specifically);
- The need for more engineering interventions and maintenance; and
- Education.

The Plan responds to community concerns around safety and is aligned to recommendations made by local, regional and provincial stakeholder groups. The Plan has received positive support from all our stakeholders.

Our Focus Areas

A focus on priority locations is at the center of our planning for Vision Zero safety investments. Through an analysis of crash data, staff have identified priority intersections and high-injury corridors which require specific road safety counter measures. The health impact and collision data reveals the existence of an unequal burden of injury amongst different road users, with pedestrians, cyclists and motorcyclists having the highest rate of death and serious injury.

When we focus on priority locations and victims of harm, resources go to where they are most urgently needed. Targeted enforcement of high-risk driving behaviours will demonstrate that those who break the rules of the road will be made to account for their irresponsible actions that put at risk innocent lives.

Using a holistic, data-driven and evidence-led approach, informed by international best practice research, the City will:

- Target **high-risk hotspot intersections** (Locations of Harm) where almost 80 % of KSI collisions occur;
- Prioritize our **most vulnerable road users**, including pedestrians, cyclists and motorcyclists, (Victims of Harm) who account for 50 % of Surrey’s KSI collisions, and
- Create a community mindset where ‘accidents’ no longer happen and **high-risk driving behaviours** (Perpetrators of Harm), which contribute to about 66% of Surrey’s KSI crashes, are no longer tolerated.

The following will form our areas of focus:

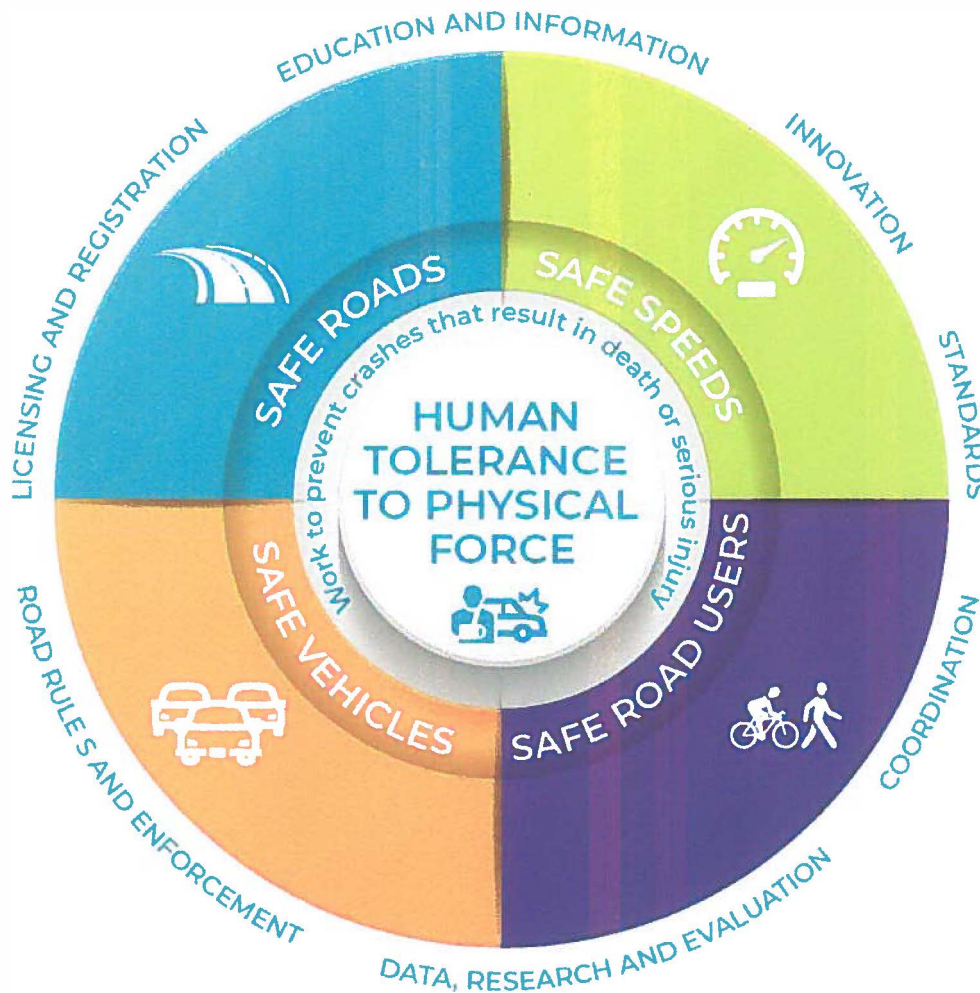


Equity

Surrey’s data demonstrates that certain subgroups of the population suffer disproportionately on our roads. We will ensure equity is embedded within our decision-making for each of the focus areas above.

Our Approach

Our strategy is based on the Safe System Approach. Different elements of a Safe System combine to produce a summary effect greater than the sum of individual treatments, so that if one part of the system fails, other parts provide protection. This means we must work together towards: road designs that prioritize safety; vehicle speeds appropriate for the road environment; road user behaviours that create a culture of safety; and safe and well-maintained vehicles.



The Safe Systems Approach

Safe Roads

In a Safe System, roads are designed to reduce the risk of crashes occurring and the severity of injury should a collision occur. Infrastructure incorporates safety features from the outset by segregating different kinds of road users, as well as traffic moving in different directions or at different speeds. Safe roads interventions will: reduce the likelihood of high-speed collisions; protect road users from side impact and head-on collision impacts; and focus on the safety of our most vulnerable road users. Safe roads prevent unintended use through design and encourage safe behaviors by users.

Safe Speeds

Travel speeds are the fundamental factor in crash severity, with the risk of death and injury increasing as travel speeds increase. Research has shown that a pedestrian hit at 30 kilometres per hour has a 90% chance of surviving, while at 55 kilometres per hour, they have only a 10% chance of surviving. Speeds must be managed through road design, enforcement and education measures, especially in areas where vulnerable road users are present or at locations where side impact and head on collisions remain possible.

Safe Road Users

The Safe Road Users pillar addresses human behaviours that contribute to collisions. While we will design and build safe roads to minimize human error, the Safe System requires that all road users follow the rules of the road. When road users fail to comply, enforcement of unsafe actions will be ensured by law enforcement.

Safe Road Users work will also focus on ensuring an understanding of laws and signage, and on employing a varied approach to education and engagement of all community members. Notwithstanding that, even the best drivers, riders and walkers will make mistakes or wrong decisions at times, having safe road users who accept their share of responsibility in safe roads for all is an important part of a safe road system. Being a safe road user involves more than understanding and following the rules of the road; it involves having greater awareness of road safety issues, understanding one's abilities and limitations, and taking necessary precautions to stay safe.

Safe Vehicles

Safe vehicles that are designed well with the appropriate safety technologies can either prevent a crash or absorb some of the crash forces to help decrease the risk of death and serious injuries. Increasingly, roads and vehicles will be managed within intelligent transport systems, relying ever more on driver-less (autonomous) vehicles and smart infrastructure. As safety becomes hardwired into vehicle technology and road design, there is potential to further reduce road casualties and deaths.

Our Partners

While numerous organizations work diligently to address road safety within their own mandates, none have the responsibility or budget for overall responsibility. It is clear that road safety is a shared responsibility requiring action from the municipality, police, health sector, community and other road safety stakeholders. In order to successfully implement road safety programs and initiatives, we must work together, be mindful of upcoming challenges and opportunities, and regularly measure progress to ensure we are heading towards our goal of Zero. In addition to working across City departments, our external partners include: the police; Surrey Fire Service; Fraser Health Authority; ICBC; and Surrey Schools.

Our Commitment

As a community, it is our responsibility to eliminate traffic deaths and serious injuries for all who share Surrey's streets. Our goal is an achievable and measurable shorter-term target: to reverse the trend of rising injuries and deaths on Surrey's roads and achieve a minimum 15% reduction in injury collisions over the next five years (2019-2023).

The safety performance of Surrey's road network will be continuously monitored, and several performance measures will be used to assess the success of the Plan. The key performance measure is the rate of killed and seriously injured per 100,000 population.

The Plan will be delivered through aligning safety targets into the work of all City departments and prioritizing road safety within planning processes. The City will work with its partners to maximize and leverage all current resources available. Through our data-driven, proactive targeting of resources to areas of greatest need, we will be able maximize our safety returns on investment.

The actions taken within this Plan will be accountable and transparent to our citizens. Embedding regular community consultation and through the use of monitoring and evaluation of our actions, staff will produce an Annual Vision Zero Report to demonstrate how effective our road safety interventions have been. They will also provide an outline of future actions, while engaging citizens in a shared commitment of moving towards the goal of Vision Zero. In addition, quarterly reports on progress will be presented to Mayor & Council.

Next Steps

The City of Surrey is hosting BC's first Vision Zero Summit (February 8 to February 9, 2019), in partnership with the Provincial Health Services Authority, Fraser Health Authority and Vancouver Coastal Health Authority. In addition to launching our Vision Zero Surrey Safe Mobility Plan, the event is intended to foster dialogue on taking a proactive approach to prevent serious injuries and save lives across our BC communities. The Summit will bring together international Vision Zero speakers to present shared solutions to our shared challenges. Civic leaders, health sector, road safety and transportation professionals from across BC will gather at Surrey City Hall to hear from experts who are working to eliminate traffic deaths and severe injuries on their streets, while increasing safe, healthy and equitable mobility for all.

A detailed Implementation Plan is being developed as a matter of priority. The first steps will involve a review of current and planned projects to ensure they proceed in a manner that prioritizes road safety benefits and prevents injuries, as well as saving lives. This Implementation Plan will detail specific interventions, counter measures, locations, milestones and budget.

Development of the Implementation Plan will include various City departments and agencies, as well as the partner organizations who together comprise the Vision Zero Surrey Action Team. The City will lead key overarching initiatives, while partner organizations will lead those initiatives that fall within their mandates. The result will be a holistic, coordinated, targeted plan of action and goals that are shared by all.

The Vision Zero Surrey Action Team will immediately work to target several 'quick wins' to address critical road safety issues. In parallel to these actions, all partners will align internal and external organizational processes to support the seamless delivery of Vision Zero objectives. Surrey will begin the journey to Zero by enhancing internal processes and using evidence-led decision making to systematically incorporate road safety into the planning, design, construction and maintenance activities.

CONCLUSION

No one should have to grieve the loss of a loved one as a result of our mobility. Vision Zero is an approach to safe mobility that prioritizes eliminating death and serious injury from the transportation system. The City of Surrey acknowledges its obligation to protect the freedom to travel across our City free from harm. We will prioritize our most vulnerable road users and protect everyone's right to safe mobility.

The Engineering Department recommends that Council approve the five-year Vision Zero Surrey Safe Mobility Plan 2019- 2023 which will move us towards zero people killed and seriously injured on our streets because, Every Life Matters.



Fraser Smith, P.Eng., MBA
General Manager, Engineering

JB/SA/cc

Appendix "I" - Vision Zero Surrey - Safe Mobility Plan 2019-2023

Appendix "II" - CR249;2018 Surrey Vision Zero Safe Mobility Plan & Summit

VISION ZERO SURREY

2019 YEAR IN REVIEW



MAVIS JOHNSON AWARD FOR ROAD SAFETY PROJECT OF THE YEAR



Vision Zero Surrey is honoured to have received the Greater Vancouver Institute of Transportation Engineers (GVITE) 2019 Mavis Johnson Road Safety Project of the Year Award for our Vision Zero Surrey Safe Mobility Plan.

The Mavis Johnson Award highlights the high quality of work completed by the Vision Zero Surrey Action Team and showcases the important, life changing actions undertaken to ensure safe roads for everyone.

Special thanks to our partners: ICBC, Surrey RCMP, Fraser Health, Surrey Fire Services, Surrey Crime Prevention Society, Surrey School District and Transit Police. Without their continued effort and collaboration, this work would not be possible.

City of Surrey Road Safety Team

Shabnem Afzal, Road Safety Manager and Vision Zero Surrey Lead

Nathan Baugh, Project Engineer

Jacki Tokaryk, Road Safety Communications and Engagement Specialist



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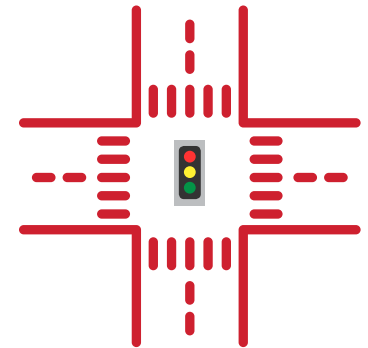
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2019 BY THE NUMBERS

Vision Zero Surrey has taken collaborative action to reduce serious crashes on our roads.

9

OF TOP 50 INTERSECTIONS REDESIGNED



33
SPEEDHUMPS
INSTALLED

11
TRAFFIC
SIGNALS
CONSTRUCTED

INSTALLED
**FLASHING
LIGHTS**
AT **13** CROSSWALKS

36 
LEFT TURN
SIGNALS INSTALLED

CONSTRUCTED
9 KM &
OF SIDEWALK
 **7 KM**
OF CYCLIST
INFRASTRUCTURE

POLICE ISSUED



3,597
DISTRACTED
DRIVING
VIOLATIONS

1,320
IMMEDIATE
ROADSIDE
PROHIBITIONS

COMMERCIAL VEHICLE ENFORCEMENT

5
OPERATIONS


630
VEHICLES
CHECKED


511
VIOLATION TICKETS



LEADING THE PROVINCE WITH OVER



70 LEADING PEDESTRIAN INTERVALS INSTALLED



20

NEW CROSSWALKS ADDED

ADDRESSED **2,300** RESIDENT CONCERNS

450 TRAFFIC SIGN IMPROVEMENTS

SPEED DATA COLLECTED AT **335** SITES

In addition to our initial Stakeholder Consultation Vision Zero Surrey held

BC'S FIRST VISION ZERO SUMMIT



OVER **21,000** REFLECTORS HANDED OUT

VOLUNTEERS CONTRIBUTED OVER **3,400 HRS** TOWARDS TRAFFIC SAFETY INITIATIVES.

34 CAMERAS ADDED TO OUR EXISTING INVENTORY OF 442, ENABLING US TO SAVE VIDEO FOOTAGE OF 1,260 COLLISIONS.



2 LECTURES BY ROAD SAFETY LEADERS

12 EDUCATION CAMPAIGNS



15 OUTREACH EVENTS

4 PROJECTS WITH UNIVERSITY RESEARCH PARTNERS



#VISIONZEROSURREY SOCIAL HASHTAG USED **190** TIMES

30 VISION ZERO PRESENTATIONS



INTRODUCTION



Vision Zero Surrey Safe Mobility Plan was launched in Feb 2019. At that time we committed to report back on our progress. In this first annual report, we have highlighted some of our key actions towards making our streets safe for all road users. Surrey's fatal crashes went down from 21 in 2018 to 16 in 2019 (Source: RCMP). Despite this reduction, no loss of life on the transportation network is acceptable and in the year ahead we will continue to work towards zero people killed and seriously injured on our roads.

Everyone has the right to safe mobility. No matter WHO we are, WHERE we are going or HOW we are getting there.



In Surrey, an average of 20 people die and over 12,000 are injured on our roads each year. The City of Surrey acknowledges its obligation to protect the freedom to safely travel across our city free from harm. We must prioritize our most vulnerable road users and protect everyone's right to safe mobility.



Our Vision

Surrey has Zero people killed and seriously injured (KSI) on its roads and human life is valued above all else in our transportation network.



Our Mission

Working in collaboration with our partners, we will take equitable, data-driven and evidence-based actions to ensure that city resources are spent where they will have the greatest impact on creating safer streets.

Our Target

As a community, it's our responsibility to eliminate traffic deaths and serious injuries for all who share Surrey streets. Our goal is an achievable and measurable shorter-term target:


15%

Minimum 15% reduction in KSI collisions per 100,000 population over five years (2019-2023)

* KSI = Killed and Serious Injured

WHAT IS VISION ZERO?



Vision Zero is an approach to safe mobility that prioritizes eliminating death and serious injury in the transportation network. Initiated in countries like Sweden, Norway and the United Kingdom, this approach has resulted in these nations now having the lowest rates of motor vehicle crash fatalities in the world. Recognizing the success of this strategy in other areas, Vision Zero has spread across North America and is recognized to be an effective way to keep our roads safe for all road users.

VISION ZERO CORE PRINCIPLES

	Serious traffic collisions are not “accidents,” they are predictable and preventable.
	People inevitably make mistakes – but these mistakes should not be fatal or result in serious injury.
	All aspects of the transportation system must prioritize human life and health.
	System designers, policymakers and road users of every mode share responsibility to improve safety.
	Speed is a fundamental factor in crash severity, and is prioritized.

VISION ZERO SURREY SAFE MOBILITY PLAN

February 2019

The City launched the award winning Vision Zero Surrey Safe Mobility Plan (2019-2023) at BC’s first Vision Zero Summit, which it hosted. The summit brought together international experts, civic leaders, transportation and health Professionals to share best practices in road safety.

March 2019

Recognizing that road safety is a shared responsibility, a multi-agency Vision Zero Surrey Action Team was created to coordinate and help undertake this important work. The team is supported by a Research and Evaluation Working Group that helps to monitor and evaluate our progress. The Education and Engagement Working Group undertakes key road safety campaigns and engagement activities to ensure our community is informed.

Today

Today, we are in a better position to understand the complex interactions between road users, road design, and vehicles, and are working to ensure the greatest impacts are made to create safe streets for everyone.

This report highlights some of the key actions we have collectively undertaken in 2019 to help us reach our goal of zero people killed and seriously injured.

FOCUS AREAS



VICTIMS OF HARM



BETWEEN 2009 AND 2018
2,600
PEDESTRIANS
WERE KILLED
OR INJURED ON
SURREY'S ROADS



BETWEEN 2009 AND 2018
1,000
CYCLISTS
WERE KILLED
OR INJURED ON
SURREY'S ROADS



BETWEEN 2009 AND 2018
750
MOTORCYCLISTS
WERE KILLED
OR INJURED ON
SURREY'S ROADS

LOCATIONS OF HARM

IN 2018 ALONE, OVER
9,200
PEOPLE
WERE KILLED OR
INJURED AT A SURREY
INTERSECTION

PERPETRATORS OF HARM

IN
SURREY



DISTRACTED DRIVING
CONTRIBUTES TO
33%



SPEEDING
CONTRIBUTES TO
18%



IMPAIRED DRIVING
CONTRIBUTES TO
16%

OF KSI
COLLISIONS

EQUITY

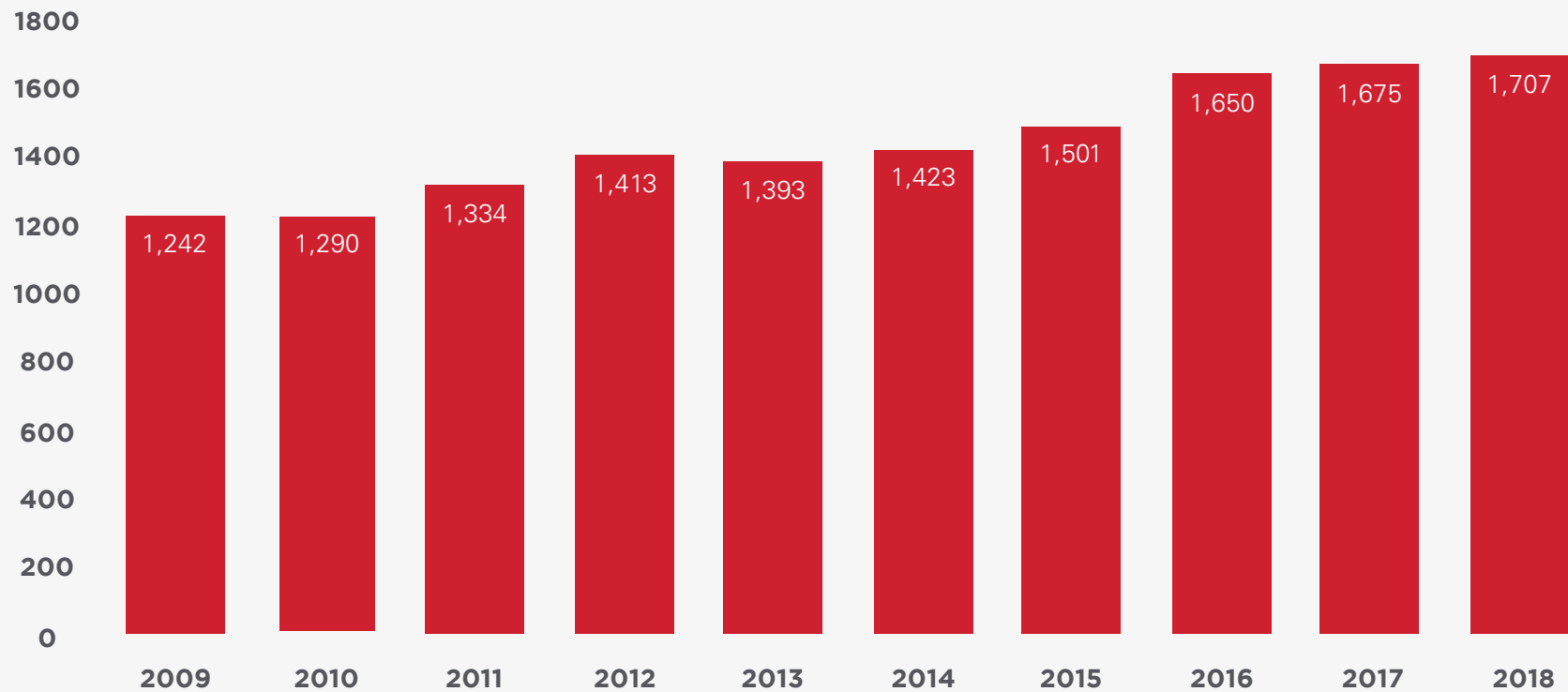


Surrey's collision data shows that certain subgroups of the population suffer disproportionately on our roads. We will ensure that equity is embedded within our decision making for each of the focus areas above.

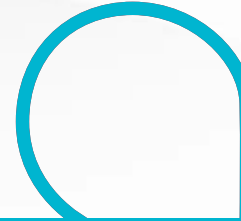
* ICBC and TAS Collision Data

TRENDS IN SURREY'S CRASH DATA

INJURY COLLISIONS PER 100,000 POPULATION



The most recent ICBC crash data shows that Surrey's injury collision rate increased again in 2018. The 2018 crash data will be used to update our baseline numbers. Upon receipt of 2019 data, we will evaluate our progress.



PROVINCIAL HIGHWAY
6% OF ROAD NETWORK

7% OF INJURY CRASHES

LOCAL ROADS
63% OF ROAD NETWORK



13% OF INJURY CRASHES

ARTERIAL ROADS
18% OF ROAD NETWORK

65% OF INJURY CRASHES



COLLECTOR ROADS
13% OF ROAD NETWORK

15% OF INJURY CRASHES



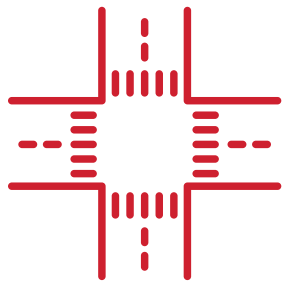
PEDESTRIANS,
CYCLISTS AND
MOTORCYCLISTS
ACCOUNT FOR

50% OF KSIs
IN SURREY

65%

OF SURREY'S
KSI CRASHES
OCCUR ON ONLY

5% OF OUR
STREETS



80%

OF SURREY'S KSI COLLISIONS
OCCUR AT INTERSECTIONS



33%



17%



16%



HIGH RISK DRIVING BEHAVIOURS
SUCH AS DISTRACTED DRIVING,
SPEEDING AND IMPAIRED
DRIVING, ARE CONTRIBUTING
FACTORS IN ABOUT

66%

OF SURREY'S
KSI CRASHES

* KSI = Killed and Seriously Injured

* Injury = All Injury Severities

MAJOR ACHIEVEMENTS

Established Road Safety Team

In 2017, the City of Surrey took the bold step of creating a new Road Safety Team within the Engineering Department. With a 26 per cent increase in injury collisions in Surrey over the last 10 years, personal tragedy suffered by families and very broad societal impacts, the City understood the critical need for such a team who would work towards safe streets for the citizens of Surrey. The team is now an integral part of the Transportation Division at the City and is responsible for leading the implementation of road safety infrastructure improvements, ongoing stakeholder development, advocacy, research and evaluation of best practices, as well as the development of the most appropriate and fiscally responsible responses to Surrey's road safety issues.

Developed and Launched Vision Zero Surrey Safe Mobility Plan

In 2018, the Road Safety Team began developing the Vision Zero Surrey Safe Mobility Plan. Based on data and international best practices, the Team adopted the Vision Zero philosophy and Safe Systems approach to ensure road safety initiatives and countermeasures are implemented where they are needed most, ensuring maximum impact in reducing fatalities and injuries on our roadways. In December 2018, Council approved the focus areas and framework for the Plan. The Plan officially launched in early 2019.

Hosted BC's first Vision Zero Summit

In February 2019, the City of Surrey and the Provincial Health Services Authority partnered to deliver BC's First Vision Zero Summit. Over 150 attendees heard from international experts and champions active in implementing Vision Zero and the Safe Systems Approach in North America. The Summit helped to build and sustain leadership, collaboration, and accountability for the elimination of serious injuries and fatalities on the road system and marked Surrey as a leader in Road Safety.



In remembrance of the 21 lives lost on Surrey roads in 2018.

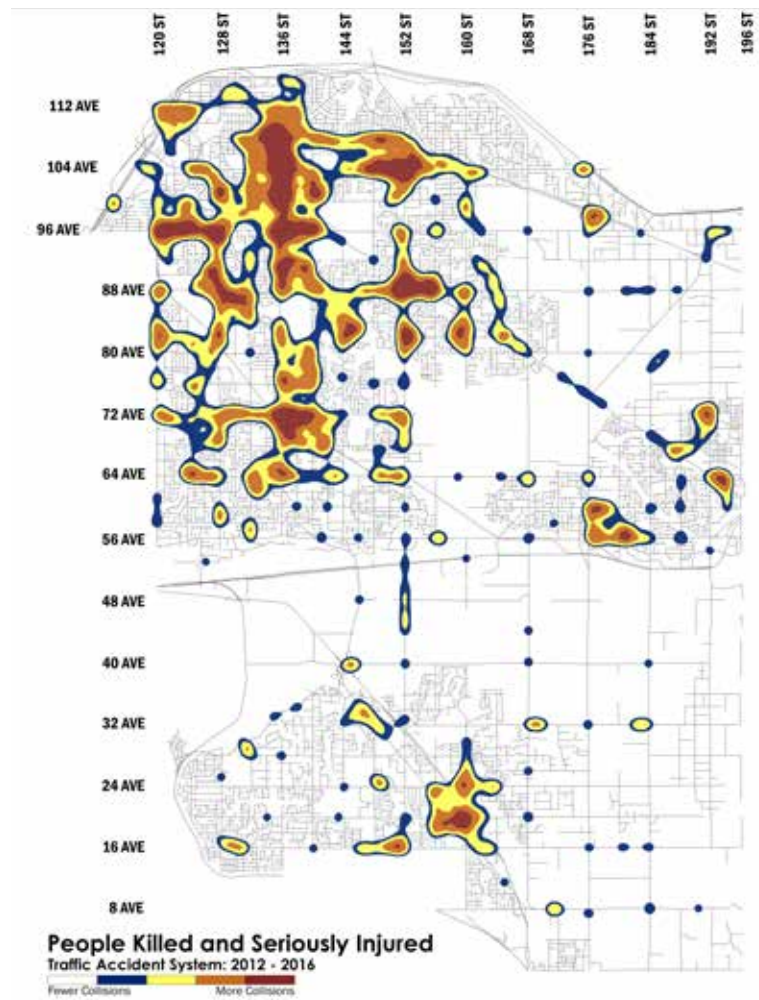


Display at BC's First Vision Zero Summit



Data Improvements

Vision Zero Surrey is committed to an evidence led and data driven approach to our work. Crash data informs the work that we do, the decisions we make, and the policies we implement.



Surrey is a Provincial leader in crash data analysis. In 2019, we continued to improve our datasets through innovative analytics and GIS applications. By sharing expertise and best practices, we have worked closely with our partners to develop policy and practice for Provincial crash datasets. Some highlights of our work related to data include:

	<p>Using machine learning techniques, City staff have extracted key information for road safety analysis from existing datasets that was not previously accessible Citywide.</p>
	<p>Fraser Health and the BC Centre for Disease Control, with input from Vision Zero Surrey, have been working to develop a BC Injury Data Cube that will provide more granular data on injury severity and the locations of the most severe collisions.</p>
	<p>City Staff and ICBC partnered to improve our approach to the ICBC Road Improvement Program. Funding provided by ICBC through this program allows the two agencies to cost share on important road safety projects in Surrey. Improved crash data was used to select and prioritize projects for funding, in order to target the locations with the most need.</p>
	<p>City Staff have created crash data dashboards and mapping applications that provide critical information to the Transportation Division as they make decisions related to infrastructure improvements.</p>



Photo: Engineers and Geoscientists BC (EGBC)

City of Surrey Traffic Management Centre

Partnerships and Governance

Road safety is a shared responsibility. Collaboration is critical in order to successfully implement road safety programs and initiatives under Vision Zero Surrey. Following stakeholder consultation, partnerships were formed between key internal and external agencies/departments. This collaborative structure helps us to address challenges, leverage opportunities and measure progress.

Vision Zero Action Team

A City-led, multi-sectoral team that works to align organizational processes to support the seamless delivery of Vision Zero Surrey. There are two working groups that fall under the direction of the Action Team - the Education and Engagement Working Group and Research and Evaluation Working Group.

Education and Engagement Working Group

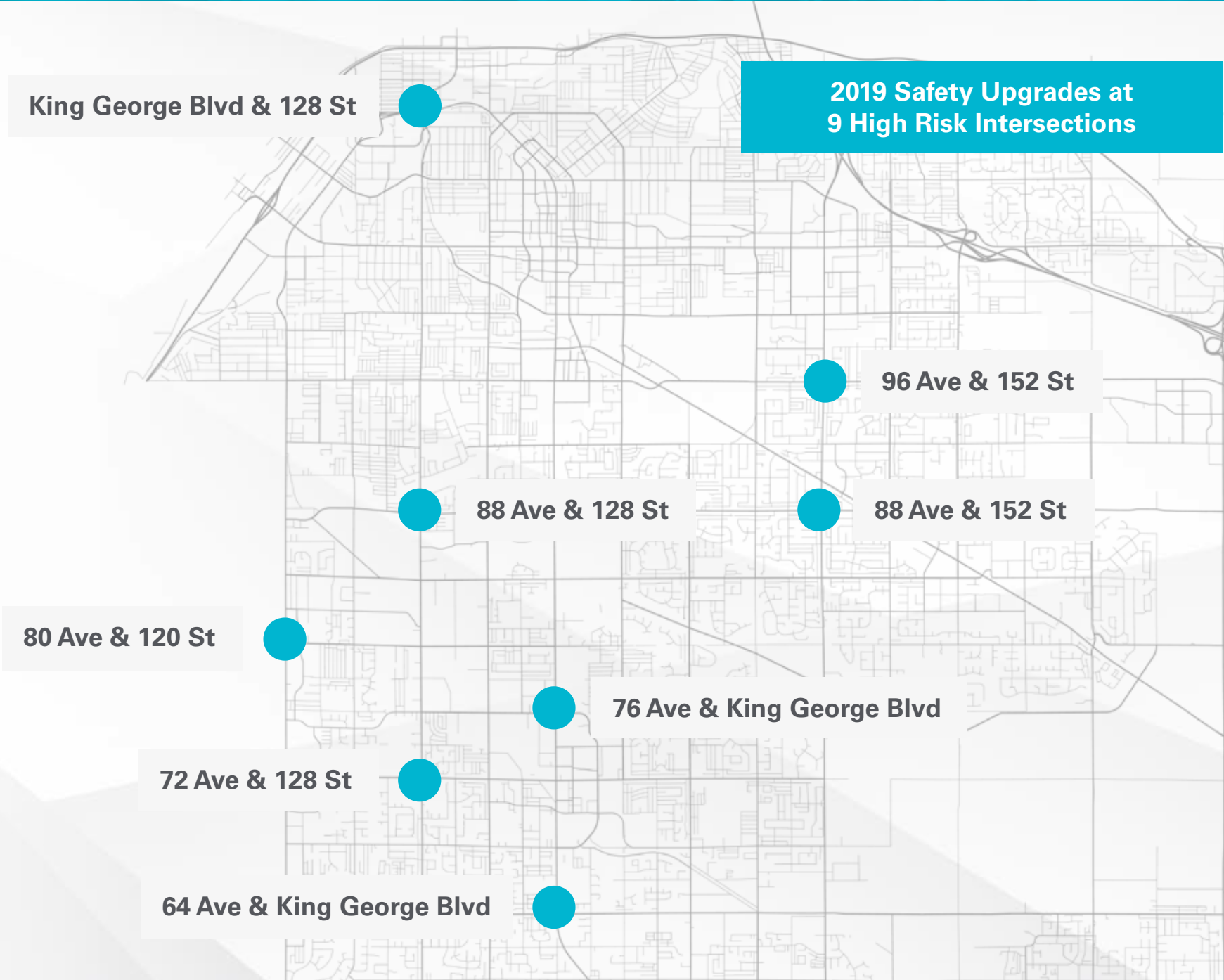
A multi-agency, cross-sectoral team that works to shift public perceptions by educating road users about safe road use. A key milestone for the working group in 2019, was the development of a three-year communications, education and engagement plan. The plan creates a framework to enhance collaboration between partners, amplify road safety messages and increase community outreach initiatives.

Research and Evaluation Working Group

Vision Zero Surrey success depends on timely and accurate data. We use this data to target resources where they are needed most, identify existing and emerging road safety issues, and evaluate our success. Each Partner organization has data and analysis resources to contribute to Vision Zero Surrey. Through collaborative processes, this working group supports Vision Zero Surrey by providing recommendations based on best practices research, and by assisting and providing guidance on Vision Zero Surrey evaluation.



SAFE ROADS ACTIONS



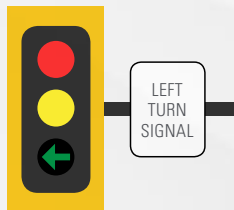
Safety Improvements at 9 High Crash Intersections

Our data shows that close to 80 per cent of our KSI collisions occur at intersections. We have identified the top locations where these serious collisions occur most frequently. By the end of 2019, we completed safety upgrades at 9 locations.

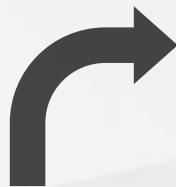
Some of the common safety measures that are installed at our high collision intersections include:



Improved Streetlighting: Wherever possible we upgrade the streetlighting to have at least one streetlight illuminating each crosswalk. This helps improve the visibility of pedestrians.



Fully Protected Left Turns: Fully protected left turns are implemented at locations where the collision history shows a high frequency of collisions involving left turning drivers. This signal operation provides a dedicated set of signal indications for left turning vehicles which separates the movement of pedestrians and oncoming traffic from the movement of left turning drivers.



Removed or Re-designed Channelized Right Turn Lanes: Right turn channels increase the speed of right turning vehicles and can make it challenging for right turning drivers to see vehicles on the road they are entering. We are either removing right turn channels, or where this is not feasible, we are implementing smart right turn channels.

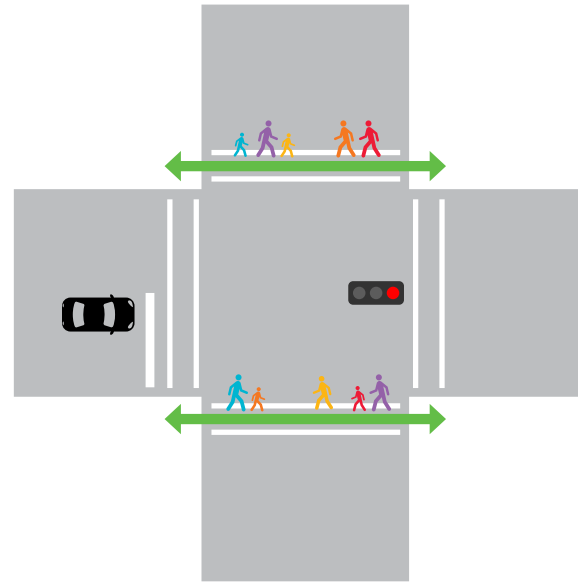


64 Ave & Fraser Hwy

Leading Pedestrian Intervals

Pedestrians and vehicles normally enter the intersection at the same time. The light changes green for drivers and the “WALK” sign illuminates for pedestrians. This is when conflicts can occur. Leading Pedestrian Intervals (LPIs) are traffic signal timing features that give pedestrians a head start into the crosswalk before the vehicle green is shown. This allows drivers to see pedestrians more easily and LPIs have been shown to reduce pedestrian-vehicle crashes by up to 60 percent.

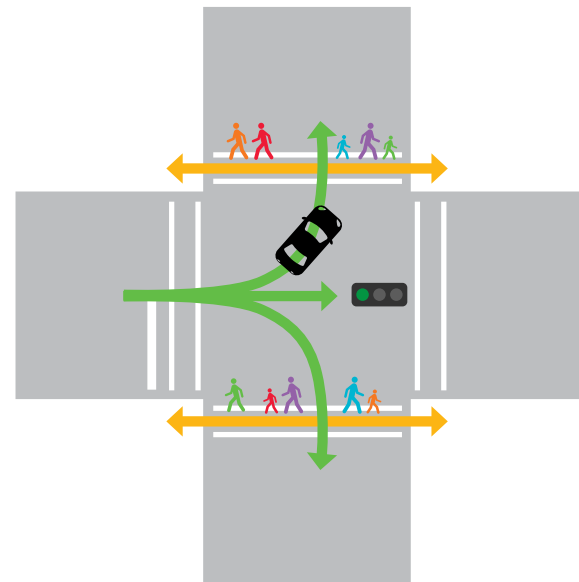
We are currently leading the province with over 70 LPIs in place. A key enhancement to our current LPI program is to develop criteria that will guide our use of LPIs at 4-legged intersections. We will be looking at our traffic volume, pedestrian volume and collision data to inform decisions about where LPIs are expected to be most beneficial.



LPI PHASE 1:

PEDESTRIANS ONLY

When the pedestrian pushbutton is pressed, pedestrians are given a 7 second head start to enter the intersection. Vehicles are shown a red light during this time.



LPI PHASE 2:

PEDESTRIANS & CARS

After 7 seconds, through and left turning vehicles are given the green light to go. Pedestrians are now more visible to drivers and turning vehicles must yield to those already in the crosswalk.



SAFE ROAD USER ACTIONS



Safe road user actions relate to initiatives that raise awareness about the importance of road safety and positively shift driving behaviours. Often these campaigns are undertaken with our police partners and include an enforcement component, such as violation tickets and road side prohibitions.

Collaborative Campaigns and Projects

In 2019, Vision Zero Surrey partners worked together on several education campaigns and projects. High risk driving behaviours, such as distracted driving and speeding, as well as pedestrian and school safety, were a focus. Two noteworthy initiatives are:

- Operation Hang Up, which launched in September 2019, aimed to increase awareness of distracted driving and its harms. A partnership between Surrey RCMP, ICBC, Surrey Crime Prevention Society and the City, the campaign held seven Cell Watch shifts which checked over 14,219 vehicles.
- Through funding from the Fraser Health Vision Zero Community Grant initiative, the Surrey RCMP piloted a new restorative justice approach. The Safe Driver Dialogue Circles (SDDC) hold youth and young adults accountable for first time distracted driving infractions or other violations. To date, 83 participants have been referred to the program, and 59 have completed.

Social Media Outreach

A key social media campaign for 2019 was focused on the City's rapid implementation of Leading Pedestrians Intervals and their benefits to both pedestrians and drivers.

Collisions are preventable. By changing our mindset, safety will be the norm.



Operation Hang Up



Think of Me Campaign

SAFE SPEEDS ACTIONS

Safe speed initiatives includes designing roads that slow drivers at critical locations, enhancing speed enforcement and promoting community awareness of safe speeds.

Speed Management Initiatives

Travel speeds are the fundamental factor in crash severity, with the risk of death and injury increasing as travel speed increases.

In 2019, partner organizations worked hard to implement infrastructure, enforcement, and engagement campaigns to slow speeds at critical locations.



Operation Double Take



The City builds several types of traffic calming and speed management measures. Physical traffic calming devices such as speed humps and raised crossings are used to slow traffic on local roads and around schools, while education and enforcement measures such as speed reader boards and Police enforcement are typically used on major roads. In the last year, the City installed 33 speed humps at various locations throughout Surrey in residential areas and around schools. Best practices research also continues to enhance the City's speed reader board program.



Understanding trends in the speed data is critical for developing targeted, location specific speed management interventions. In 2019, the City collected speed data at over 335 sites which will be used to conduct detailed data analysis and inform our collaborative speed management work.



In partnership with the Surrey RCMP, ICBC and the City, police officer and police vehicle cut outs were deployed in high risk collision areas to target speeding and other high risk driving behaviours. This resulted in a 12% decrease in vehicle speeds and doubled compliance of speed limits.



VEHICLE SPEED & PEDESTRIAN CRASH SEVERITY



**90% chance
of survival**



**50% chance
of survival**



**10% chance
of survival**



THE YEAR AHEAD

Critical Collision Response Protocols

We will work together to determine Critical Collision Response Protocols to help address the factors that contribute to serious collisions at specific crash locations.

Enhanced Safe and Active Schools Program

By aligning the existing Safe and Active Schools Program with Vision Zero Surrey, we will leverage strong multi-sectoral partnerships to enhance collaboration, develop new initiatives and incorporate equity within programming.

Proposal for Reduced Speed Limit Pilot

Background research and data analysis will be conducted to inform the development of the pilot project proposal for reduced speed limits in selected resident areas in Surrey. Speed limits on higher volume roads will not be impacted by the pilot project.

Pedestrian Safety Review

We will conduct a detailed review of the pedestrian crash data to determine trends. These trends will inform the development of pedestrian specific infrastructure, enforcement and engagement safety initiatives.

Fully Protected Left Turn Signals

Throughout 2020 we will install or convert, where required, fully protected left turn signals which will help to reduce left turn crashes by up to 100 per cent.

Top 50 Intersections

We will continue to upgrade the top 50 high collision locations in Surrey over the next one to four years, while regularly reviewing collision data to prioritize other locations for road safety upgrades.

Evaluation Framework

Through partnerships with local Universities and collaboration with road safety experts, we are developing an evaluation framework for our Vision Zero work. We will also investigate the use of near miss analysis for the evaluation of infrastructure improvements.





Incorporate Vision Zero Principles into Design and Construction Terms of Reference

A City's design standards are an important influencer of how streets are designed and built. By reviewing and updating our design standards through a road safety lens, we will incorporate Safe Roads best practices and prioritize our vulnerable road users.

Equity and Diversity in Road Safety

Using a data-driven and evidence-led approach, we will identify communities and populations that are disproportionately impacted by traffic deaths and serious injuries, prioritizing road safety investments in these areas. By developing relationships with communities and populations to learn about their specific road safety challenges and delivering programs in partnership, we will target improvements towards those most impacted.

Vision Zero Surrey Education and Engagement

We will continue to engage with the community and stakeholders about important road safety topics, gathering valuable input about road safety views, opinions and beliefs. New and enhanced education and engagement programs will be delivered with our partners helping to create awareness about road safety in Surrey.

Enhanced Vision Zero Surrey Webpages

In 2020, the City of Surrey will undergo a significant website update. As part of this, our webpages will be a hub of information where we will share information about Vision Zero Surrey, collision maps, videos, road safety activities and campaigns.

NOTE: The projects listed above will begin in 2020 but some may not be completed until year two or three of the Vision Zero Surrey Safe Mobility Plan.



MEASURING SUCCESS



The safety performance of Surrey's road network will be continuously monitored, and several performance measures will be used to assess the success of the Vision Zero Surrey Plan. These measures will serve as key indicators of our progress towards our 5-year goal.

Our Target

A minimum 15 per cent reduction in the rate of killed and seriously injured per 100,000 population over five years.

Our Key Performance Measure

The key performance measure for the Vision Zero Surrey Safe Mobility Plan is the rate of killed and seriously injured per 100,000 population.

Our Focus Area Measures

Recognizing that the City of Surrey has a target of Zero KSIs, interim goals are being set at:

↓
15%

A minimum 15 per cent reduction in each focus area performance measure over five years.



CONCLUSION



As this report demonstrates, we are committed as a City to realising our Vision Zero goals. We have implemented some quick wins to address critical road safety issues. In addition to the initiatives outlined, Surrey has begun the journey to Zero by enhancing internal processes and using evidence-led decision making to systematically incorporate road safety into the design and review of capital projects.

A 'Road Safety Lens' is being applied to the evaluation of the City's programs and it's being woven into the fabric of how we do business. We know that if we proactively consider and implement safety countermeasures when we build new developments, parks, recreation and other infrastructure, we will save lives.

"Institutionalizing" and "mainstreaming" road safety within the City is necessary for the Plan's objectives to be achieved.

We will continue to lead the City towards Zero serious injuries and deaths on our streets and it will take equitable, holistic, collaborative and sustained approaches to street design, traffic safety enforcement, education and behaviour change to create safe streets for everyone.

Even One Death on our streets is too many. We look forward to working with our partners and our community to ensure we are all safe no matter who we are, where we are going or how we are getting there.

PARTNERS



City of Surrey

surrey.ca

Fraser Health

fraserhealth.ca

ICBC

icbc.com/road-safety

Surrey Crime Prevention Society

preventcrime.ca

Surrey Fire Services

surrey.ca

Surrey RCMP

surrey.rcmp.ca

Surrey School District

surreyschools.ca

Transit Police

transitpolice.ca

To find out more about **Vision Zero Surrey** go to surrey.ca/visionzero, check us out on Facebook, Twitter and Instagram or watch out for us at community events.





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